

Amendments to the Specification:

Please replace paragraphs [46] and [61] with the following amended paragraphs:

[46] FIG. 4 illustrates a diagram of the digital adaptive control part in FIG.2. The digital adaptive control unit 200 includes an HPA model output unit 202 that generates an HPA model using the HPA model value, determined by the HPA modeling unit 180. Thereafter, the HPA model output unit 202 amplifies the predistorted reference signal, which is predistorted by being applied to the predistortion model, using the HPA model. A first subtracter 203 ~~extractes~~ extracts a predistortion inphase error function e_{FI} by subtracting an amplitude component r_{RI} of the first phase reference signal, generated from the reference signal generation unit 190, and an output amplitude component r_{AI} of the HPA model output unit 202. A second subtracter 204 extracts a predistortion quadrature error function e_{FQ} by subtracting an amplitude component r_{RQ} of the second phase reference signal, generated from the reference signal generation unit 190, and an output amplitude component r_{AQ} of the HPA model output unit 202. A predistortion model module 201 predistorts the reference signal generated from the reference signal generation unit 190, using the predistortion model, to output the predistorted reference signal to the HPA model output unit 202. Additionally, the predistortion model module 201 updates the predistortion coefficient of the predistortion unit 110 by applying the error functions extracted respectively from the first and second subtracters 203 and 204 to the predistortion model, through the LMS algorithm.

[61] FIG. 6A illustrates a graph modeling a non-linear characteristic of a general power amplifier for amplitude modulation to amplitude modulation (AM to AM), as a 7th order polynomial expression. FIG. 6B illustrates a graph modeling a non-linear characteristic of a general power amplifier for AM to phase modulation (PM), as a 7th order polynomial expression. By examination, it may be seen that they accord with the Saleh model, which is hereby incorporated by reference. [[.]]